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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,226	10/17/2001	Scott MacKay	594-25572-US	5588

7590 09/08/2003

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EXAMINER

TAYLOR, VICTOR J

ART UNIT PAPER NUMBER

2863

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,226

Applicant(s)

MACKAY, SCOTT

Examiner

Victor J. Taylor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-23 is/are allowed.
- 6) ☒ Claim(s) 1 and 24 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 25-28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 09 June 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8. 6) ☒ Other: *Office action*.

DETAILED ACTION

Drawings

1. The drawings were received on June 09, 2003. These new drawings are approved. The drafts person previously approved drawings 1-4 and the examiner approves the new drawing figures 5-6.

Response to Arguments

2. Applicant's arguments see paper 7, filed June 09, 2003, with respect to the rejection of claims 1-28 under 102(b) and the arguments concerning the water velocity dynamic correction and the angle dependent time correction have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Corcoran in U. S. patent number 4,839,869.

3. Applicant's amendment and argument see paper 7, filed June 09, 2003, with respect to the drawing objection and the objection to the IDS have been fully considered and are persuasive. The objection to the drawing and to the improper IDS of March 07, 2003 in paper 5 has been withdrawn.

Prior Art

4. The prior art of record and not relied upon and is considered pertinent to the applicant as follows:

I. Schneider U. S. Patent Number 5,532,976 in class 367/038 is cited for the spatial trace seismic velocity processing and determining the velocity and travel time with velocity modeling in lines 10-40 of column 3.

II. Sanders et al., U. S. Patent Number 4,935,903 in class 367/024 is cited for the seismic vertical system processing and the vertical angle reflections in figure 2 using the travel time equation and velocity functions V(t) in lines 1-65 in columns 5 and 6.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Corcoran in US 4,839,869.

With regard to claim 1, concerning limitation of a., Corcoran discloses the limitation of determining an observed velocity in, (the velocity model of the gather data in line 34 of column 6 and figure 1-C and in the apparent $V_{\text{sub } V}$ vertical velocity in line 41 of column 5 and in combination with the complete patent.) The claim limitations are underlined with the disclosures in the art in the brackets.

b. Corcoran further discloses the limitation of determining a vertical time correction using said observed velocity in, (the converting from vertical velocity travel

time to depth from the Vv vertical velocity in lines 40-50 of column 5.) The claim limitations are underlined with the disclosures in the art in the brackets.

c. Corcoran further discloses the limitation of apply said vertical time correction to seismic data before normal move-out in, (by applying the dynamically corrections and taking into account an appropriate shear and correction velocity and travel time and then stacking the corrected data or otherwise processed in lines 34-40 of column 6 and discloses velocity gather with dynamic correction before stacking in lines 10-35 of column 7.) The claim limitations are underlined with the disclosures in the art in the brackets.

With regard to claim 24, and concerning element a. The arguments applied to claim 1 are applied to claim 24 for their common features and for the common features of the observed velocity and the converted wave data in lines 10-40 of column 7 and for the velocity model and dynamic correction of the seismic in lines 20-22 of column 7.

b. Corcoran further discloses the limitation of determining an angle dependent time correction using said observed velocity in, (the angle change in the vertical velocity RP in figure 2 from converting from vertical velocity travel time to depth from the Vv vertical velocity in lines 40-50 of column 5.) The claim limitations are underlined with the disclosures in the art in the brackets.

c. Corcoran further discloses the limitation of apply said angle dependent time correction to seismic data before normal move-out in, (in figure 2 by applying the dynamically corrections and taking into account an appropriate shear and correction velocity and travel time and then stacking the corrected data or otherwise processed in

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lines 34-40 of column 6 and discloses velocity gather with dynamic correction before stacking in lines 10-35 of column 7.) The claim limitations are underlined with the disclosures in the art in the brackets.

Allowable Subject Matter

7. Claims 6-15, and 16-23 are allowed.

8. The following is an examiner's statement of reasons for allowance: The applicants amendments and arguments of record in paper 7 on June 9, 2003 convinces the examiner that the velocity time corrections prior to NMO for the water velocity dynamic correction and angle dependent time correction in claim 6 and in claim 16 with the processing steps in seismic data processing is not found in the cited art of record.

It is these arguments of record in paper 7 and these limitations of record expressed in each of these claims and not found, taught, or suggested in the prior art of record, that makes these claims allowable over the prior art.

Claims 7-15, which are dependent on the allowed independent claim 6 are allowed at least for the reasons cited above.

Claims 17-23, which are dependent on the allowed independent claims 16 are allowed at least for the reasons cited above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claim Objections

9. Claims 2 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form with the claim limitation of determining the observed velocity using the equation for the velocity observed with and including all of the limitations of the base claim and any intervening claims.

10. Claims 3 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form with the steps of determining the observed velocity using the velocity analysis of the seismic gather with and including all of the limitations of the base claim and any intervening claims.

11. Claims 4 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form with the steps for determining the time-dependent and offset-dependent sample corrections with and including all of the limitations of the base claim and any intervening claims.

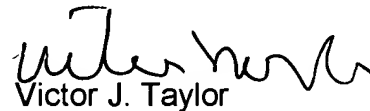
12. Claims 5 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form using the vertical time correction and the change in time angle formulation using the selected ideal velocity with and including all of the limitations of the base claim and any intervening claims.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor J. Taylor whose telephone number is 703-305-4470. The examiner can normally be reached on 8:00 to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 703-308-3126. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.



Victor J. Taylor
Examiner
Art Unit 2863

**VICTOR J. TAYLOR
PATENT EXAMINER**